

CLAIMS

What is claimed is:

1. A failover system comprising:

remote storage center for storing a plurality of files;

5 local computer for utilizing at least one file stored at said storage center;

first local device, coupled to said local computer and to said storage center, for operating as an active storage port, said active storage port for receiving file system operation requests on said file from said local computer, and for transferring information for said file system operations, said local computer and said first local device being coupled through a communications mechanism; and

second local device, coupled to said local computer and to said storage center, for operating as a passive storage port, said passive storage port for switching to said active storage port during a failover condition, said local computer and said second local device being coupled through said communications mechanism utilized by said first local device.

2. The failover system as set forth in claim 1, further comprising additional local devices to support a 2N failover configuration of storage ports, wherein "N" represents any integer value.

20 3. The failover system as set forth in claim 1, wherein said communications mechanism comprises:

a network;

said first local device comprises a network interface that communicates on said network using a network address; and

said second local device comprises a network interface that communicates on said network after a failover condition using said network address of said first local device.

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4. The failover system as set forth in claim 3, wherein said communications mechanism further comprises a network file system, such that said local computer exports said local file system using said network address to conduct said file system operations.

5. The failover system as set forth in claim 1, wherein:

said active storage port further comprises a network interface, to couple said active storage port to said passive storage port, and processes to monitor the health of said active storage port and to enter said failover condition if said health falls below a pre-determined threshold; and

said passive storage port further comprises a network interface, to couple said passive storage port to said active storage port, and processes to query said active storage port to obtain a status of said health of said active storage port.

6. The failover system as set forth in claim 1, wherein said active storage port comprises a data cache, for storing said file, and a directory cache for storing file system information on said file.

7. The failover system as set forth in claim 6, wherein said first local device and said second local device further comprise network interfaces for communicating to said storage center.

5 8. An apparatus comprising:
first local device for operating as an active storage port for a remote storage center that stores at least one file, said active storage port for receiving file system operation requests for said file, and for generating information for said file system operation, said first local device being accessed through a communications mechanism; and

10 second local device for operating as a passive storage port, said passive storage port for switching to said active storage port during a failover condition to said active storage port, said second local device being accessed through said communications mechanism utilized by said first local device.

15 9. The apparatus as set forth in claim 8, further comprising additional local devices to support a 2N failover configuration of storage ports, wherein "N" represents any integer value.

20 10. The apparatus as set forth in claim 8, wherein said communications mechanism comprises:
a network;

said first local device comprises a network interface that communicates on said network using a network address; and

said second local device comprises a network interface that communicates on said network after a failover condition using said network address of said first local device.

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11. The apparatus as set forth in claim 8, wherein:

said first local device further comprises a network interface, to couple said first local device to said second local device, and processes to monitor health of said first local device and to enter said failover condition if said health falls below a pre-determined threshold; and

said second local device further comprises a network interface, to couple said second local device to said first local device, and processes to query said first local device to obtain a status of said health of said first local device.

12. The apparatus as set forth in claim 11, wherein said first local device and said second local device comprise a data cache, for storing said file, and a directory cache for storing file system information on said file.

13. The apparatus as set forth in claim 11, wherein said first local device and said second local device further comprise network interfaces for communicating to said storage center.

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14. A method for configuring a storage system for failover operation, said method comprising the steps of:

storing a plurality of files in a remote storage center;

utilizing at least one file stored at said storage center in a local computer;

coupling a first local device to said local computer and to said storage center;

operating said first local device as an active storage port by receiving file system operation requests for said file from said local computer, and by transferring information for said file system operations,

transferring information between said local computer and said first local device via a communication mechanism;

coupling a second local device to said local computer and to said storage center;

operating said a second local device as a passive storage port by switching said second device to an active storage port to execute a failover condition in said first local device; and

transferring information between said local computer and said second local device via said communication mechanism.

15. The method as set forth in claim 14, further comprising the step of coupling additional local devices to support a 2N failover configuration of storage ports, wherein "N" represents any integer value.

16. The method as set forth in claim 14, wherein:

transferring information between said local computer and said first local device via a communication mechanism comprises the step of transferring information over a network using a network address; and

transferring information between said local computer and said second local device via
5 a communication mechanism comprises the step of transferring information over a network using said network address of said first local device.

17. The method as set forth in claim 14, wherein:

transferring information between said local computer and said first local device via a
10 communication mechanism comprises the step of transferring information over a network using a network address;

transferring information between said local computer and said second local device via
a communication mechanism comprises the step of transferring information over a network
using said network address of said first local device; and

15 exporting a network file system of said local computer over said network using said network address.

18. The method as set forth in claim 14, further comprising the steps of:

coupling said first local device to said second local device;

20 monitoring the health of said active storage port;

submitting a query from said passive storage port to said active storage port to obtain a status of said health of active storage port; and

entering said failover condition if said health falls below a pre-determined threshold.

19. The method as set forth in claim 14, further comprising the steps of caching, in said active storage port, data for said file and file system information on said file.

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20. The method as set forth in claim 14, further comprising the step of coupling said active storage port to said storage center to receive data for said file and file system information on said file.

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